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TED (15) - 4043

Reg. No.

Signature

(REVISION — 2015)

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

MICROCONTROLLER AND INTERFACING

[Time: 3 hours

(Maximum marks: 100)

PART — A

(Maximum marks: 10)

Marks

- I Answer all questions in one or two sentences. Each question carries 2 marks.
 - 1. State the significance of auxiliary carry flag.
 - 2. Mention the operation of CPL A instruction.
 - 3. How interrupts are enabled and disabled in 8051.
 - 4. Differentiate simplex and duplex transmission.
 - 5. Define the term interfacing.

 $(5 \times 2 = 10)$

PART — B

(Maximum marks: 30)

- II Answer any five of the following questions. Each question carries 6 marks.
 - 1. List the features of 8051 microcontroller.
 - 2. Explain the following instructions.

INC @Ri;

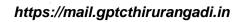
SUBB A,Rn;

DAA;

SWAP A

- 3. Explain the interrupts in 8051.
- 4. Describe. SCON special function register.
- 5. Describe the procedure to generate time delay using TIMER.
- 6. Illustrate the interfacing of DC motor with 8051.
- 7. Describe the interfacing of ADC with 8051.

 $(5 \times 6 = 30)$







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(Maximum marks: 60)

(Answer one full question from each unit. Each full question carries 15 marks.)

Unit — I

III	(a)	Explain the various registers of 8051 microcontroller.	10
	(b)	Draw the block diagram of 8051 microcontroller.	5
		OR	
IV	(a)	Explain the pin functions of 8051 microcontroller.	10
	(b)	Draw the RAM memory organization of 8051.	5
		Unit — II	•
V	(a)	Explain the various addressing modes of 8051 with examples.	10
	(b)	Write a program to clear lower 128 bytes of internal RAM.	5
		OR	
VI	(a)	Explain the steps in executing an interrupt in 8051.	8
	(b)	Draw the format of IE special function register and explain.	7
		Unit — III	
VII	(a)	Explain the various modes of operation of Timers of 8051.	8
	(b)	Describe TMOD special function register.	7
		OR	
VIII	(a)	Explain the way to double the Baud rate in 8051.	8
	(b)	Draw the format of PCON register and explain.	7
		Unit — IV	
IX	(a)	Describe the interfacing of LCD with 8051.	8
	(b)	Explain a temperature control system using 8051.	7
		Or	
X	(a)	Explain how the stepper motor can be controlled by 8051.	8
	(b)	Explain water level indicator system using 8051.	7